



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/722,290

11/24/2003

Soonkap Hahn

81633/6776

9067

22242

7590

05/17/2006

FITCH EVEN TABIN AND FLANNERY  
120 SOUTH LA SALLE STREET  
SUITE 1600  
CHICAGO, IL 60603-3406

EXAMINER

CROW, ROBERT THOMAS

ART UNIT

PAPER NUMBER

1634

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/722,290

Applicant(s)

HAHN ET AL.

Examiner

Robert T. Crow

Art Unit

1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 15-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-22 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-14, drawn to microarray hybridization devices, classified in class 435, subclass 287.1.
- II. Claims 15-17, drawn to cover and gasket subassemblies, classified in class 422, subclass 50.
- III. Claims 18-22, drawn to methods of effecting hybridization, classified in class 435, subclass 6.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are directed to related products. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, Inventions I and II do not overlap in scope, as Inventions I and II have a materially different design. For example, Invention I is a microarray hybridization device designed to have a flat surface, a liquid barrier means, a means closing a chamber. In contrast, Invention II is a cover and gasket subassembly designed to have a cover, a rectangular perimeter barrier, pressure-sensitive adhesive, and a release sheet covering said adhesive.

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the device of Invention I can be used to culture cells.

Inventions II and III are independent and distinct. Inventions are independent and distinct if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the inventions have different modes of operation and different functions. Invention II operates by having a flat cover, a perimeter barrier and a pressure-sensitive adhesive and functions to form a microarray hybridization device. In contrast, Invention III operates by filling a chamber with a target solution and moving said target solution to a chamber and functions to affect hybridization between probes and the target solution.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter as exemplified by their different classification, restriction for examination purposes as indicated is proper. Furthermore, a search for the inventions of all of the groups would not be co-extensive because a search indicating the *process is* novel or nonobvious would not extend to a holding that the *product itself is* novel or nonobvious; similarly,

a search indicating that *the product is* known or would have been obvious would not extend to a holding that *the process is* known or would have been obvious.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312. In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

During a telephone conversation with James Schumann on 25 April 2006, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-22 are therefore withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claims 1-14 are currently under prosecution.

### *Information Disclosure Statement*

The Information Disclosure Statement filed 11 April 2004 is acknowledged. However, only the Abstract of Document FR 2,697,913 A1 (dated 13 May 1994) is being considered because an English translation of the remainder of the document has not been provided.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-10 and 12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claims 2-10 are indefinite in claim 2, which recited the limitation "said cover" in line 1 of claim 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested that the word "said" be changed to "a."

2. Claims 4 and 12 are indefinite in the recitation "to space said cover about 0.2 and about 2 mm from said surface" at the end of the claims. It is unclear how the cover can uniformly spaced from said surface as required in claim 2 and be "about 0.2 and about 2 mm from said surface" [emphasis added by Examiner]. It is suggested that the claims be amended for clarification.

3. Claims 5-8 are indefinite in claim 5, which the recites the limitation "the four walls" in lines 2-3 of the claim. There is insufficient antecedent basis for this limitation in claim 1 because claim 1 does not define the barrier as having wall or 1-4 walls. It is suggested that the claim be amended to provide proper antecedent basis.

4. Claim 8 is indefinite in the recitation "said triangular fingers" in lines 1-2 of the claim. There is insufficient antecedent basis for this limitation in claim 7. It is suggested that the word "said" be deleted from the claim.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by the Sigma-Aldrich Techware Catalog (Sigma-Aldrich, St. Louis, MO, page 181 (1995-1996)).

Regarding claim 1, Sigma-Aldrich teach a microarray hybridization device comprising: a flat substrate having a surface to which a microarray of reactive moieties can be attached (e.g., the bottom of a shake flask [it is not noted that the claim does not require a microarray on the surface]; catalog # F 0644); liquid barrier means juxtaposed with said surface to create a chamber in which said microarray is located (e.g., the interior of the flask); and means closing said chamber so that said device may be manipulated without loss of liquid target solution that fills said chamber except for a gaseous bubble included therein (e.g., a lid on the flask), said barrier means having inwardly facing surfaces which border said chamber (e.g., the flask is triple-baffled; see also the picture for catalog # F 0152 on page 181), which surfaces are formed with a plurality of bubble-fracturing elements that extend laterally into said chamber so that when said device is moved so that a liquid target solution in said chamber moves along said surface from one boundary to another boundary, a bubble initially in said chamber



is ruptured into a plurality of microbubbles that then assure very effective distribution of the liquid target solution in said chamber across the entire microarray, driven by movement of said bubbles (e.g., the baffles improve mixing and aeration; caption above catalog #F 0152).

Regarding claim 2, Sigma-Aldrich teach the device of claim 1 wherein said cover is flat and is spaced uniformly from said surface from said barrier means (e.g., the flat lid in the picture accompanying catalog # F 0644).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-5, 7, 9, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schembri (U.S. Patent No. 6,186,659 B1, issued 13 February 2001) in view of Chung et al (U.S. Patent Application Publication No. US 2003/0123322 A1, published 3 July 2003).

Regarding claim 1, Schembri teaches a microarray hybridization device which comprises: a flat substrate having a surface to which a microarray of reactive moieties can be attached (e.g., an oligonucleotide array on a substrate; column 5, lines 20-47); liquid barrier means juxtaposed with said surface to create a chamber in which said microarray is located (e.g., the array is in a hybridization chamber; column 5, lines 20-47); and means closing said chamber so said device may be manipulated without loss of liquid target solution that fills said chamber (e.g., the device has a cover; column 5, lines 30-34) except for a gaseous bubble included therein (e.g., the chamber contains a bubble; column 5, lines 17-19). While Schembri teaches said barrier means having inwardly facing surfaces which border said chamber (i.e., the walls of the chamber) and that the bubble is used to facilitate mixing of the liquid target solution (e.g., the chamber is moved so that mixing is accomplished via movement of the bubble; column 5, lines 50-56), Schembri does not teach barrier means with a plurality of bubble-fracturing elements.

However, Chung et al teach a microfluidic mixing apparatus (Abstract) for use in screening nucleic acids (paragraph 0032) comprising liquid barrier means juxtaposed with said surface to create a mixing chamber having a plurality of inwardly facing surfaces which border said chamber (i.e., the walls of the chamber).

Chung et al also teach the chamber with a plurality of baffles that extend laterally into the chamber (e.g., spanning a substrate (paragraph 0052), wherein the baffles have sharp edges (i.e., the corners of the baffles; Figure 5). Therefore, the baffles of Chung et al meet the limitation of barrier means for bubble-fracturing elements that extend laterally in the chamber, defined on page 9 of the instant Specification as structures that extend into the reaction chamber (e.g., span a substrate as taught by Chung et al; paragraph 0052), have and have sharp edges (e.g., the corners of the baffles as taught by Chung et al; Figure 5). Chung et al also teach the added benefit that the baffles facilitate operation of the microfluidic apparatus (paragraph 0048).

It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was claimed to have modified the device as taught by Schembri with the plurality of bubble-fracturing elements (i.e., baffles) as taught by Chung et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have facilitated operation of the microfluidic apparatus as explicitly taught by Chung et al (paragraph 0048).

Regarding claim 2, the device of claim 1 is discussed above. Schembri also teach the device wherein the cover is flat (column 11, lines 53-55) and is spaced uniformly from said surface by said barrier means (i.e., the cover must be parallel to the plane of the substrate to avoid artificial gradients; column 3, lines 25-31).

Regarding claim 3, the device of claim 3 is discussed above. Chung et al also teach the device wherein the cover is substantially rigid and transparent (e.g., glass; paragraph 0038).

Regarding claim 4, the device of claim 2 is discussed above. Schembri also teaches the device wherein said barrier means has a height such as to space said cover about 0.2 and about 2 mm for said surface (e.g., the chamber is about 0.5 mm high; column 5, lines 47-50).

Regarding claim 5, the device of claim 2 is discussed above. Chung et al also teach the device wherein said barrier means forms a generally rectangular perimeter of said chamber and wherein one or more of the four walls of said barrier means includes sharp edges (e.g., corners of baffles) that are aligned substantially perpendicular to said surface, which edges are spaced apart by pockets and function as said bubble-fracturing elements (e.g., the chamber has baffles; paragraph 0052 and Figures 3 and 5).

Regarding claim 7, the device of claim 2 is discussed above. While Chung et al do not specifically teach the baffles on the shorter walls; the courts have held that the rearrangement of parts within a device is obvious when the arrangement does not

specifically modify the operation of the device (*In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)). See MPEP §2144.04.

Regarding claim 9, the device of claim 2 is discussed above. Schembri teaches the device wherein the chamber is made from hydrophobic materials (column 12, lines 18-21).

Regarding claim 11, Schembri teaches a microarray hybridization device which comprises: a flat substrate having an upper surface and a microarray of reactive moieties attached to said upper surface (e.g., an oligonucleotide array on a substrate; column 5, lines 20-47); a liquid perimeter barrier juxtaposed with said surface to create a chamber in which said microarray is located (e.g., the array is in a hybridization chamber; column 5, lines 20-47); and a cover juxtaposed with said barrier to close said chamber so said device may be manipulated without loss of liquid target solution that fills said chamber (e.g., the device has a cover; column 5, lines 30-34) except for a gaseous bubble included therein (e.g., the chamber contains a bubble; column 5, lines 17-19). While Schembri teaches said barrier means having inwardly facing walls which border said chamber (i.e., the walls of the chamber) and that the bubble is used to facilitate mixing of the liquid target solution (e.g., the chamber is moved so that mixing is accomplished via movement of the bubble; column 5, lines 50-56), Schembri does not teach barrier means with a plurality of bubble-fracturing elements.

However, Chung et al teach a microfluidic mixing apparatus (Abstract) for use in screening nucleic acids (paragraph 0032) comprising liquid barrier means juxtaposed

with said surface to create a mixing chamber having a plurality of inwardly facing surfaces which border said chamber (i.e., the walls of the chamber).

Chung et al also teach the chamber with a plurality of baffles that extend laterally into the chamber (e.g., spanning a substrate (paragraph 0052), wherein the baffles have sharp edges (i.e., the corners of the baffles; Figure 5). Therefore, the baffles of Chung et al meet the limitation of barrier means for bubble-fracturing elements that extend laterally in the chamber, defined on page 9 of the instant Specification as structures that extend into the reaction chamber (e.g., span a substrate as taught by Chung et al; paragraph 0052), have and have sharp edges (e.g., the corners of the baffles as taught by Chung et al; Figure 5). Chung et al also teach the added benefit that the baffles facilitate operation of the microfluidic apparatus (paragraph 0048).

It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was claimed to have modified the device as taught by Schembri with the plurality of bubble-fracturing elements (i.e., baffles) as taught by Chung et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have facilitated operation of the microfluidic apparatus as explicitly taught by Chung et al (paragraph 0048).

Regarding claim 12, the device of claim 11 is discussed above. Schembri also teaches the device wherein the cover is flat (column 11, lines 53-55) and is spaced uniformly from said surface by said barrier means (i.e., the cover must be parallel to the

plane of the substrate to avoid artificial gradients; column 3, lines 25-31). Schembri teaches the device wherein said barrier means has a height such as to space said cover about 0.2 and about 2 mm for said surface (e.g., the chamber is about 0.5 mm high; column 5, lines 47-50). Chung et al teach the device wherein the cover is substantially rigid and transparent (e.g., glass; paragraph 0038).

Regarding claim 13, the device of claim 12 is discussed above. Chung et al also teach the device wherein said barrier means forms a generally rectangular perimeter of said chamber and wherein one or more of the four walls of said barrier means includes sharp edges (e.g., the corners of baffles) that are aligned substantially perpendicular to said surface, which edges are spaced apart by pockets and function as said bubble-fracturing elements (e.g., the chamber has baffles; paragraph 0052 and Figures 3 and 5).

3. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schembri (U.S. Patent No. 6,186,659 B1, issued 13 February 2001) and Chung et al (U.S. Patent Application Publication No. US 2003/0123322 A1, published 3 July 2003) as applied to claims 5 and 7 above, and further in view of del Valle P. et al (U.S. Patent No. 4,750,556, issued 14 June 1988).

Regarding claims 6 and 8, the devices of claims 5 and 7 are discussed above. Chung et al also teach the bubble-fracturing walls are disposed along two opposed boundary walls of said rectangular perimeter barrier (e.g., the device has a series of baffles separated from both the substrate and the cover plate; paragraph 52) having

sharp edges (i.e., the corners of the baffles, Figure 5) and pockets between the baffles (e.g., a series of gaps separates the baffles, paragraph 0052). Chung et al also teach the baffles are aligned so as to project in the direction from which bubbles in the target solution in said chamber will normally approach the respective wall with the device is moved (e.g., the baffles facilitate operation of the microfluidic apparatus; paragraph 0048). Neither Schembri nor Chung et al teach triangular baffles.

However, del Valle P. et al teach a reactor apparatus having a reactor vessel with triangular baffles with the added advantage that the triangular baffles allow optimum regulation of reaction conditions and increase reactor productivity (Abstract).

It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was claimed to have modified the device as taught by Schembri and Chung et al with the triangular baffles as taught by del Valle P. et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in optimum regulation of reaction conditions and increased reactor productivity as explicitly taught by del Valle P. (Abstract).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schembri (U.S. Patent No. 6,186,659 B1, issued 13 February 2001) and Chung et al (U.S. Patent Application Publication No. US 2003/0123322 A1, published 3 July 2003) as applied to



claim 2 above, and further in view of Bedingham et al (U.S. Patent Publication Application No US 2002/0047003, published 25 April 2002).

Regarding claim 10, the device of claim 2 is discussed above. While Schembri teaches the device wherein the chamber is made from hydrophobic materials (column 12, lines 18-21), neither Schembri nor Chung et al teach opaque materials.

However, Bedingham et al teach a microfluidic device (paragraph 0240) for handling nucleic acids (paragraph 0027) wherein the device (i.e., including the cover) is made of opaque materials with the added benefit that the chambers of the device are substantially shielded from energy that is detrimental to the desired reactions (paragraph 0153).

It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was claimed to have modified the device as taught by Schembri and Chung et al with the opaque cover taught by Bedingham et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in the chambers of the device being substantially shielded from energy that is detrimental to the desired reactions as explicitly taught by Bedingham et al (paragraph 0153).

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schembri (U.S. Patent No. 6,186,659 B1, issued 13 February 2001) and Chung et al (U.S. Patent Application Publication No. US 2003/0123322 A1, published 3 July 2003) as applied to

claim 11 above, and further in view of Taylor et al (PCT International Publication Number WO 99/36576, published 22 July 1999).

Regarding claim 14, the device of claim 12 is discussed above. Schembri also teaches said cover includes at least one filling port through which said liquid target solution can be applied into said chamber (column 12, lines 3-5 and Figure 2) and wherein said microarray includes a plurality of spots which are attached to said upper surface and extend upward (e.g., spots are on the surface and have a thickness; column 2, lines 11-25 and Figure 9). Both Schembri and Chung et al are silent with respect to the thickness of the spots.

However, Taylor et al teach intelligent gel pad arrays (Abstract) on a support for sequencing by hybridization wherein the gel pads carry reactive moieties (e.g., nucleic acids are immobilized in the pads; page 1, lines 34-36) have a thickness of about 20 microns (page 19, lines 19-22) with the added advantage that intelligent gel pads produce signals that are detected and correlated with analyte concentration (page 24, lines 3-11).

It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was claimed to have modified the method of Schembri and Chung et al with the intelligent gel pads as taught by Taylor et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because such a modification would have resulted in an array that

Art Unit: 1634

produces signals that are detected and correlated with analyte concentration as explicitly taught by Taylor et al (page 24, lines 3-11).

*Conclusion*

No claim is allowed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert T. Crow whose telephone number is (571) 272-1113. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
BJ FORMAN, PH.D.  
PRIMARY EXAMINER

Robert T. Crow  
Examiner  
Art Unit 1634

  
5/11/06